REMARKS

In response to the above-identified Office Action, Applicants amend the application and seek reconsideration thereof. In this response, Applicants amend Claims 1 and 6. Applicants do not cancel any claims or add any new claims. Accordingly, Claims 1-17 are pending.

I. Rejected Under 35 U.S.C. § 102

Claims 1, 3-6, 9, and 11-13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,493,577 issued to Choquette, et al. ("Choquette"). Applicants respectfully disagree for the following reasons.

To anticipate a claim, the Examiner must show that a single reference teaches each of the elements of that claim. Among other elements, claim 1 recites "a first semiconductor layer of a first conductivity type which is formed on a semiconductor substrate and includes one or more material layers," "a third semiconductor layer of a second conductivity type which is formed on the second semiconductor layer and includes one or more material layers," and "the first semiconductor layer and the third semiconductor layer are confinement-conducting regions."

The Examiner characterizes the mirror stack 14 as the first semiconductor layer and the mirror stack 16 as the second semiconductor layer. However, mirror stacks do not serve as confinement-conducting regions as recited in Claim 1. Mirror stacks do not confine the conducting currents; rather, they are made to be highly reflective (col. 5, lines 34-47) to block the light from escaping the device, thus providing sufficient optical gains at the output. Choquette teaches that the reflectivity of the first mirror stack 14 is higher than the reflectivity of the second mirror stack 16. The higher reflectivity of the first mirror stack 14 prevents the light from entering it, thus reflecting the light toward the surface of the device (Fig. 1, Fig. 2, and col. 5, lines 34-47). A confinement-conducting region, in contrast, does not serve to block the light. A confinement-conducting region is conductive of electrical current but confines the flow of the current within the region. There is nothing in Choquette that teaches any confinement performed by the mirror stacks

14 and 16. Thus, Choquette's mirror stacks cannot anticipate the first and the third semiconductor layers.

Applicants have only been able to find the word "confinement" mentioned in association with the control layer 20 after carefully reviewing Choquette. The confinement functions performed by the control layers 20 provide both carder and optical confinement within the active region 18 and the resonant optical cavity (col. 10, lines 15-19). However, because the control layer 20 does not include one or more material layers as recited in Claim, the control layers 20 also cannot anticipate the first and the third semiconductor layers.

Further, the oxide layer or the nitride layer of the amended Claim 1 is substantially different from the control layer 20 of Choquette. The control layer 20 in Choquette comprises a semiconductor alloy containing aluminum, e.g., Al(Ga)As, that may be partially oxidized after a mesa is formed. Choquette also teaches an oxidized portion and a non-oxidized portion in the semiconductor layers. However, Choquette does not teach a recess partially or wholly filled with an oxide layer, a nitride layer, or a combination of them as recited in Claim 1. Choquette fails to even mention a filling process, or a recess filled with an oxide layer or a nitride layer.

The device recited in Claim 1 has the quality of excellent heat dissipation. Further, the device of Claim 1, when used as a laser device, is capable of reducing the refractive index between a light-emitting core region and an adjacent cladding region, thereby improving the transverse mode of the laser light (page 7, lines 22-30 of Applicants' specification). The advantageous qualities of the claimed device are at least partly derived from filling the recess with the oxide layer, nitride layer, or a combination of them as recited in Claim 1.

Thus, Choquette does not teach each of the elements of Claim 1. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claim 1 are requested.

Independent Claim 9 likewise recites confinement-conducting regions. Applicants respectfully submit that at least for similar reasons set forth above, Choquette does not teach each

of the elements of Claim 9. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claim 9 are requested.

Claims 3-6 and 11-13 depend respectively from Claims 1 and 9 and incorporate the limitations thereof. Thus, at least for the reasons mentioned above in regard to Claims 1 and 9, Choquette does not anticipate these dependent claims. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claims 3-6 and 11-13 are requested.

Claims 2 and 10 are also rejected under 35 U.S.C. § 102(b) as being anticipated by Choquette. Claims 2 and 10 depend respectively from Claims 1 and 9 and incorporate the limitation thereof. Thus, at least for the reasons mentioned above in regard to Claims 1 and 9, Choquette does not anticipate Claims 2 and 10. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claims 2 and 10 are requested.

II. Claims Rejected Under 35 U.S.C. § 103

Claims 2 and 10 stand rejected, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Choquette. Applicants respectfully disagree for the following reasons.

To establish a *prima facie* case of obviousness, the Examiner must show the cited references, combined, teach or suggest each of the elements of a claim. As discussed above in regard to Claim 1, Choquette's mirror stacks serve to reflect the light, not to confine the current. Choquette does not teach or suggest using the mirror stacks as the confinement-conducting regions. Thus, Choquette does not teach or suggest each of the elements of Claims 2 and 10. Accordingly, reconsideration and withdrawal of the obviousness rejection of Claims 2 and 10 are requested.

III. Allowable Subject Matter

In regard to Claims 7, 8, and 14-17, the Examiner indicates that these claims recite allowable subject matter but are objected to as being dependent on Claim 9. The Examiner states that Claims 10-13 would be allowable if rewritten in an independent form. Applicants respectfully

submit that the amendment to Claim 9 has obviated the need to rewrite Claims 10-13. As Claim 9 is in condition for allowance, Claims 10-13, which depend from Claim 9 and incorporate the limitations thereof, are allowable at least for the reasons mentioned in regard to Claim 9. Accordingly, reconsideration and withdrawal of the objection of Claims 10-13 are requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-17 patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207 3800.

Respectfully submitted,

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CERTIFICATE OF MAILING:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 14, 2005.

Lillian E. Rodriguez — June 14, 2005